

# MATRIX-600 Specifications

## MIXER:

*Sensitivity / Impedance (for 1Vrms on PREAMP outputs, channels' VOLUME controls and MASTER VOLUME in FCW position)*

Ch. 1-4: XLR and 1/4" TRS combo MIC inputs (balanced):	5 mV / 2 k Ohms $\Omega$
Ch. 1-4: 1/4" TRS LINE inputs (balanced):	50 mV / 20 k Ohms
Ch. 5: XLR MIC input (balanced):	5 mV / 2 k Ohms $\Omega$
Ch. 5: 1/4" TRS INSTRUMENT input (mono, unbalanced):	75 mV / 1 M Ohms $\Omega$
Ch. 5: 1/4" TRS STEREO LINE input (unbalanced):	150 mV / 1 M Ohms $\Omega$
Ch. 6: Stereo RCA and 3.5mm mini jack MP3/CD input (unbalanced):	50 mV / 10 k Ohms
Ch. 7: Stereo RCA HOUSE input (bypasses MASTER VOLUME):	500 mV / 10 k Ohms $\Omega$
Phantom power on Ch. 1-4:	48Vdc

## Channels' 3-band EQs

Ch. 1-4:	Bass: shelf 150 Hz; +/-9 dB Mid: 1 kHz; +/-6 dB High: shelf 8 kHz; +/-9 dB
Ch. 5-6:	Bass: shelf 100 Hz; +/-9 dB Mid: 2 kHz; +/-6 dB High: shelf 15 kHz; +/-9 dB

MASTER 7-band EQ: +/-6dB @ 63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz

SUBWOOFER filter:	100 Hz at -3dB
SUBWOOFER output:	2 Vrms
MONITOR output:	3 Vrms
RECORD output:	0.25 Vrms

## AMPLIFIER:

Output power: 2x300Wrms into 4 Ohms

Frequency Response (with filters and EQs disabled):	20 Hz – 20 kHz, +0/-1 dB
Total Harmonic Distortion (at -10dB from rated power):	<0.05%
Signal/Noise ratio (A-weighted, reference to rated power):	better than 100dB

## LOUDSPEAKERS:

Enclosure:	3-Way, rear ported bass reflex, black painted
Woofers:	10" high excursion
Mid range driver:	6.5" transducer
Compression driver:	1" Phenolic on exponential horn
Frequency response:	50 Hz – 20 kHz
X-over frequencies:	500 Hz, 2.5 kHz

## GENERAL SYSTEM:

Weight: Amp/mixer	29 lbs (13.1 kg)
Weight: Loudspeaker (each)	45lbs (20.4 kg)
Dimensions: Amp/mixer (W x H x D)	10" x 17" x 10.25" (254mm x 432mm x 260mm)
Dimensions: Loudspeaker (W x H x D) (each)	13.25" x 24" x 12.25" (337mm x 610mm x 311mm)

## SUGGESTED APPLICATIONS:

**Mobile DJ \* Karaoke \* Nightclub, Restaurant, Bar Install \* Corporate Audio / Video \* Home Entertainment System \* Live Sound System \* Stage Monitoring System \* Booth Monitoring System**



3383 Gage Avenue, Huntington Park, CA, 90255

Phone: 323-277-4100 Fax: 323-277-4108

National: 1-800-344-4ETI

Internet: [www.B-52PRO.com](http://www.B-52PRO.com)

E-mail: [information@B-52PRO.com](mailto:information@B-52PRO.com)

Note: Specifications are subject to change without notice

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

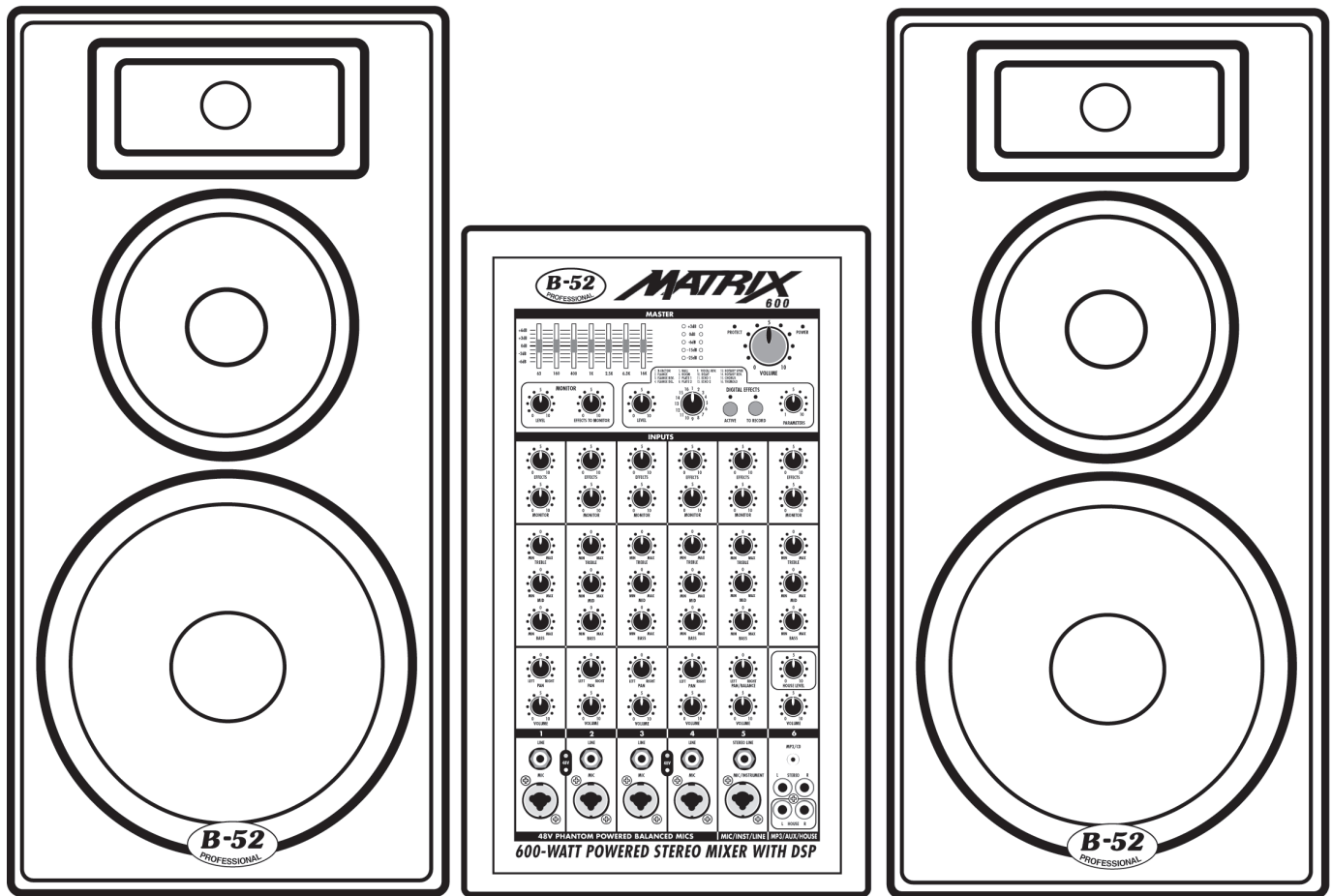
— Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/ TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
- (1) This device may not cause harmful interference, and
  - (2) this device must accept any interference received, including interference that may cause undesired operation.



# **MATRIX**

**600**  
**600-Watt Active System**



**600-WATT POWERED STEREO MIXER WITH DSP  
AND 2 x10" THREE-WAY SPEAKERS**

<b>Warnings and Important Information . . .</b>	<b>2</b>	<b>Rear Panel Controls . . . . .</b>	<b>9-10</b>
<b>Welcome Message / Contact Details . . .</b>	<b>3</b>	<b>Loudspeakers . . . . .</b>	<b>11</b>
<b>Important Safety Information . . . . .</b>	<b>4</b>	<b>Warranty . . . . .</b>	<b>11</b>
<b>Features . . . . .</b>	<b>5</b>	<b>Specifications . . . . .</b>	<b>12</b>
<b>Front Panel Controls . . . . .</b>	<b>6-8</b>		

**IMPORTANT INFORMATION**

- 1) Read these instructions.
- 2) Follow all instructions
- 3) Keep these instructions
- 4) Heed all warnings
- 5) Do not use the MATRIX-600 near water. Be extra cautious when moving the system during rain or while transporting the system over wet surfaces as water might splash on to the amplifier. *To reduce the risk of fire or electric shock, do not expose the system to rain or moisture.*
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Use in accordance with manufacturer's instructions.
- 8) Do not use near heat sources such as radiators, stoves or other devices that may produce heat.
- 9) Do not defeat the safety purpose of the polarization or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched, particularly at the plug and at the point where it exits the MATRIX-600 amplifier.
- 11) Only use attachments / accessories recommended by B-52 Pro-Audio.
- 12) Use caution when transporting the system to avoid injury from tip-over.
- 13) Unplug the MATRIX-600 during lightning storms or when not in use.
- 14) Refer all servicing to qualified personnel. Servicing is required when the MATRIX-600 has been damaged in any way, such as the power-cord or plug is damaged, liquid has been spilled into the cabinets, the unit has been exposed to moisture or rain, does not operate normally, or has been dropped.
- 15) The MATRIX-600 is not intended for outdoor fixed installations or in high moisture areas. Moisture can damage the speakers and can cause corrosion of electrical contacts. Keep speakers out of extended or intense direct sunlight. The speaker surfaces may fade and be damaged by long-term exposure to intense ultra-violet light.

**HEED ALL WARNINGS**



**WARNING:** To reduce the risk of fire or electrical shock do not expose this equipment to rain or moisture.

**CAUTION:** Connect the power cable only after you have absolutely made sure that the local mains voltage matches the voltage specified on the device. If you connect to the wrong voltage, you may destroy the electronic components of the MATRIX-600 system. See page 4 for a complete description of factory-default voltage settings.

**Hearing damage, prolonged exposure to excessive SPL**

B-52 Pro-Audio speakers, including the MATRIX-600, are capable of producing sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crews or people in the audience. Hearing protection devices such as ear-plugs are recommended. Caution should be taken to avoid extended exposures to SPL levels in excess of 85dB.

**Amplifier Module Precautions**

Do not attempt to service the MATRIX-600 by yourself. Refer all servicing to a B-52 Pro-Audio Authorized dealer. Service is required when the MATRIX-600 amplifier has been exposed to liquids or suffered damage. Do not operate the unit if liquid has spilled into the amplifier. Immediately remove the power cord from AC mains power if such an event should occur.

**WARNING – Shock Hazard**

To reduce the risk of fire or electrical shock, do not expose this unit to rain or moisture. Do not operate your MATRIX-600 near a pool or other standing water. Make sure all blades on the polarized power plug are fully inserted into the power source. Ensure the power cord is not stretched, pinched or otherwise abused. Ensure the power cord is routed to avoid foot traffic. Your MATRIX-600 amplifier should be cleaned only with a dry cloth.

**Cautions**

- 1) Do not hang the speakers by yourself. You must have a professional and licensed contractor hang the speakers. Speakers not properly flown/hung can fall causing injury or in extreme cases, death.
- 2) B-52 Pro-Audio speakers, especially the MATRIX-600, can produce high-levels of energy. When placed on slippery surfaces such as polished wood or smooth tiles, the loudspeakers may move because of intense bass output. Precautions should be taken to ensure the speakers do not fall off of a stage or raised surface.
- 3) Do not block the air intake on the rear panel and air exit slots on the top (below the wooden handle). The Matrix-600 has a high power amplifier, which dissipates heat and needs unobstructed air circulation to cool down its heatsink.
- 4) Please turn the volume down prior to turning the system ON to prevent possible damage to the speakers.
- 5) If you are using an optional active subwoofer with the MATRIX-600, make sure all of the cables from the subwoofer are connected to the MATRIX-600, the subwoofer's volume control(s) and the volume control of the MATRIX-600 are turned all the way down, before either unit is powered ON.
- 6) After connecting your source(s) to the MATRIX-600, make sure your MATRIX-600 and the signal sources have their volume controls turned all the way down before powering ON the MATRIX-600 to avoid turn ON thumps that could damage your speakers.
- 7) The MATRIX-600 should always be switched ON last, after you switch ON all connected devices and in turn switched OFF first when powering down your system.

# The MATRIX-600 Powered Stereo Mixer with DSP

## THANK YOU FOR CHOOSING THE B-52 PROFESSIONAL MATRIX-600 SYSTEM.

The MATRIX-600 is the newest member of the popular B-52 MATRIX family of active systems. Compact, powerful and portable, the MATRIX-600 delivers clean, accurate sound ideal for both stage and music playback applications. The MATRIX-600 has a true 600-watt stereo amplifier, built-in 7-channel mixer, studio-quality digital effects, phantom power and numerous patch inputs / outputs. All this combined with high quality 3-way loudspeakers makes the MATRIX-600 a versatile system you can rely on for years to come.



## We are here for you!

B-52 Professional offers a toll free customer support line to help answer any questions you have about your new MATRIX-600 and its operation. Please visit us on the web at [www.B-52Pro.com](http://www.B-52Pro.com) to download this instruction manual in electronic format in the event that you misplace your original version.

The B-52 Professional Customer Support Center is open from Monday to Friday 9am to 4:30pm US Pacific Standard Time.

TOLL FREE: 800-344-4384  
TELEPHONE: +1-323-277-4100  
FAX: +1-323-277-4108  
EMAIL: [Information@B-52Pro.com](mailto:Information@B-52Pro.com)  
[Service@B-52Pro.com](mailto:Service@B-52Pro.com)

**ALERT!** There are no user serviceable parts inside the MATRIX-600. Do not attempt to repair the MATRIX-600 yourself, without being specifically instructed to do so by an authorized B-52 Professional technician. Attempting to service the MATRIX-600 by yourself will immediately void your manufacturer's warranty. In the unlikely event your MATRIX-600 requires servicing, please contact B-52 Professional customer support for further instructions. Please keep your original packaging material as this will be required if sending your unit to the B-52 Professional Service Center for repairs.



# Important Safety Information

**1. READ INSTRUCTIONS** – All the safety and operating instructions should be read before this product is operated.

**2. RETAIN INSTRUCTIONS** – The safety and operating instructions should be retained for future reference.

**3. HEED WARNINGS** – All warnings on the appliance and in the operating instructions should be adhered to.

**4. FOLLOW INSTRUCTIONS** – All operating and use instructions should be followed.

**5. WATER AND MOISTURE** – The appliance should not be used near water - for example, a bathtub, washbowl, kitchen sink, laundry tub, wet basement, or near a swimming pool, and the like.

**6. CARTS AND STANDS** – The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

**7. WALL OR CEILING MOUNTING** – The product should only be mounted to a wall or ceiling by licensed contractor.

**8. HEAT** – Appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

**9. POWER SOURCES** – This product should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

**10. GROUNDING OR POLARIZATION** – This product may be equipped with a polarized alternation-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

**11. POWER-CORD PROTECTION** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the cord in correspondence of plugs, convenience receptacles, and the point where they exit from the appliance.

**12. CLEANING** – The appliance should be cleaned only as recommended by the manufacturer. Clean by wiping with a cloth slightly damp with water. Avoid getting water inside the appliance.

**13. NON-USE PERIODS** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

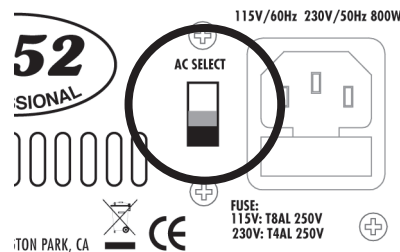
**14. OBJECT AND LIQUID ENTRY** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**15. DAMAGE REQUIRING SERVICE** – The appliance should be serviced by qualified service personnel when:

- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled

## LINE VOLTAGE SELECTION

- The necessary line-in voltage may be set with the VOLTAGE SELECTOR switch on the rear panel of the Matrix-600 (using a flat head screw driver).
- When changing voltage you will need to change the primary fuse according to the specifications written on the rear panel.
- Do not force the VOLTAGE SELECTOR switch as this may cause damage
- If the VOLTAGE SELECTOR switch does not move smoothly, contact a qualified service technician.



## POWERCORD CARE

Handle the power supply cord with care. Do not damage or deform; it may cause electric shock or malfunction when used. Hold plug attachment when removing from wall outlet. Do not pull on the power cord.

**CAUTION:** Connect the power cable only after you have absolutely made sure that the local mains voltage matches the voltage specified on the device. If you connect to the wrong voltage, you may destroy the electronic components of the MATRIX-600 system.

into the appliance; or

C. The appliance has been exposed to rain; or

D. The appliance does not appear to operate normally or exhibits a marked change in performance; or

E. The appliance has been dropped, or the enclosure damaged.

**17. SERVICING** – The user should not attempt any service to the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

**18. VENTILATION** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation according to the manufacturer's instructions have been adhered to.

**19. ATTACHMENTS** – Do not use attachments not recommended by the product manufacturer as they may cause hazards.

**20. ACCESSORIES** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand,

tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

**21. LIGHTNING** – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

**22. REPLACEMENT PARTS** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

**23. SAFETY CHECK** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

# The MATRIX-600: Features at a Glance

## MIXER:

- Seven channels tailored for flexibility in applications such as Home Entertainment, Mobile DJ, Karaoke, Nightclub and Bar Installation
- Four channels (Ch. 1-4) with balanced, combo 1/4" & XLR MIC inputs & balanced 1/4" jack line level inputs
  - ❖ 48Vdc phantom power on balanced combo 1/4" & XLR inputs for condenser microphones
  - ❖ Phantom power can be switched on/off separately on two pairs of inputs
  - ❖ The phantom power on/off switches are securely recessed behind the front panel to avoid accidentally switching them on/off
  - ❖ PAN, 3-band EQ, MONITOR LEVEL and EFFECT LEVEL controls on each channel
- Stereo input channel (Ch. 5) with high impedance 1/4" stereo input can also be used for mono acoustical instruments with a pick-up or as an extra MIC using the combo 1/4" & XLR connector
  - ❖ Stereo 1/4" input with a high |Z| input impedance to connect variety of sources
  - ❖ Combo 1/4" & XLR inputs to connect either mono acoustic instrument with a pick-up via the unbalanced 1/4" connector or low impedance dynamic MIC via the balanced XLR connector
  - ❖ PAN/BALANCE, 3-band EQ, MONITOR LEVEL and EFFECT LEVEL controls
- Stereo input channel (Ch. 6) for stereo sources
  - ❖ Dual stereo inputs with 1/4" TRS and 3.5mm mini-jack to connect any 2-channel stereo source
  - ❖ 3-band EQ, MONITOR LEVEL and EFFECT LEVEL controls
- HOUSE input with stereo RCA connectors and a dedicated LEVEL control.
  - ❖ This input is located within the Ch. 6 section but is in fact a totally separate 7th input for a stereo HOUSE source such as a CD player
- Seven-band MASTER EQ to fine-tune your sound
- LED output signal meter
- Sixteen 24-bit high-quality DSP effects with PARAMETER control and flexible routing
  - ❖ LEVEL control to mix a processed signal with the main signal
  - ❖ The PARAMETER control changes the sound character of each effect providing infinite choices
  - ❖ Switches to activate DSP and to route it to the MAIN and RECORD outputs
  - ❖ Dedicated LEVEL control to adjust the level of effects to the MONITOR output
- Patch section allows connection to suit different applications
  - ❖ PREAMP outputs to connect to an external sound system.
  - ❖ POWER AMP inputs to connect to outboard mixer or other source
  - ❖ 1/4" TRS to connect external powered Monitor to Matrix-600
  - ❖ XLR output to connect optional powered subwoofer for even greater bass impact
  - ❖ Subwoofer output switch cuts low frequency to main speakers increasing headroom
  - ❖ Stereo RCA RECORD outputs to connect to the recording device
  - ❖ 1/4" TRS jack to connect dual foot switch for MUTE and EFFECTs control
  - ❖ 1/4" TRS stereo HEADPHONES output with LEVEL control and switch to connect to either MAIN or MONITOR output signal

## POWER AMPLIFIER:

- High current output stage with discrete devices, not integrated IC amps to handle professional speakers
  - Output power of 2 x 300w RMS with significant headroom for peaks
  - Comprehensive amplifier and speaker protection circuitry to guard against short circuits, DC offsets, over-heating, turn-on thumps, subsonic and supersonic frequencies.
  - Built-in clip limiter for cleaner sound at overloads and longer life of loudspeakers
  - Equalization customized to enhance and optimize speaker system performance
  - Output for stereo headphones on rear panel
  - Very efficient cooling, utilizing a large heatsink and two direct flow fans with variable speed control for quiet operation
  - Power supply with low-noise toroidal transformer and a dual voltage (115/230Vac) selector switch
  - Combo output connectors accept both Speakon™ and 1/4" plug speaker cables for flexibility in speaker connection

## LOUDSPEAKERS

- 3-way rear-ported speakers substantially outperform traditional 2-way designs in virtually every application
- 10" high excursion woofer for extended and tight bass
- 6.5" midrange with oversized magnet for clarity and wide coverage area
- 1" exit phenolic diaphragm compression driver on an exponential horn matches the acoustic response of 6.5" midrange driver
- Premium quality X-overs with air core inductors and Mylar capacitors for clean and unrestricted SPL peaks
- Inaudible light bulb protection circuitry on the tweeters for worry-free operation
- Built-in suspension points for permanent installation and pole mounting cup for mobile applications
- 16-gauge steel grilles, rubber feet and a conveniently located top handle
- Combo input connectors accept both Speakon™ and 1/4" plug speaker cables for flexibility in speaker connection

## COMPLETE SYSTEM

- The Matrix-600 ships in two boxes and includes two speaker covers, a mixer/amplifier carrying bag and two 20' speaker cables with 1/4" plugs

# MATRIX-600 FRONT PANEL CONTROLS & CONNECTORS

## MASTER SECTION

1. **Blue POWER LED:** indicates that the Matrix-600 is turned on.
2. **MASTER VOLUME:** controls overall volume of the Matrix-600.
3. **Red PROTECT LED:** indicates when the Matrix-600 enters protection mode. Also lights briefly at TURN-ON and when speakers are muted.
4. **MASTER OUTPUT LED meter:** Five LEDs per channel help you set the output volume properly. The top red LED (+3dB) may blink occasionally but be sure to avoid constant blinking of this red LED to prevent heavy overload of the speaker system; allowing you to achieve clean sound and prolong the life of your speaker system.
5. **7-band MASTER EQ:** Use to fine-tune the sound of your system. The Matrix-600 offers +/-6dB adjustment range at center frequencies: 63Hz, 160Hz, 400Hz, 1kHz, 2.5kHz, 6.3kHz, 16kHz.

## DSP SECTION

6. **DSP LEVEL:** Controls the overall volume level of the built-in digital effects.
7. **DIGITAL EFFECTS:** The MATRIX-600 features sixteen unique DSP effects settings best designed to suit your musical needs. Select any one of these effects to be added to your mix:  
X-FACTOR (shifting the pitch of your signal up and down), FLANGE, FLANGE REV, FLANGE DEL, HALL, ROOM, PLATE 1, PLATE 2, VOCAL REV, DELAY, ECHO 1, ECHO 2, ROTARY SPKR, ROTARY REV, CHORUS & TREMOLO.
8. **DIGITAL EFFECTS ACTIVE:** Turns ON and OFF DSP effects.
9. **DIGITAL EFFECTS TO RECORD:** Adds or removes DSP effects from the RECORD outputs on the rear panel. This switch works only when the DIGITAL EFFECTS ACTIVE is turned ON.
10. **PARAMETERS:** Changes the parameters of DSP effects, so you can alter the sound of your mix. Set and range of parameters depends on which effect is active.

## MONITOR SECTION

11. **LEVEL:** Controls the overall level of the output signal of the mono MONITOR output on the rear panel. It is proportional to each channel's setting by that channel's MONITOR LEVEL. Also controls the HEADPHONES output when the headphones are switched to MONITOR as a source on the rear panel.

12. **EFFECTS TO MONITOR:** Controls the level of the DSP effects added to the mix on the MONITOR output. It affords flexibility of monitoring the mix without added effects, or with lesser effects while providing the full power of the DSP effects to the MAIN outputs.

## INPUTS 1 to 4

13. **MIC INPUT:** Combo XLR and 1/4" TRS connector for balanced dynamic or condenser microphones.
14. **48V PHANTOM POWER:** There are two switches recessed behind the front panel which turn 48Vdc phantom power ON and OFF. Phantom power is used by condenser microphones and should not be used when dynamic microphones are connected. These switches are shared between channels 1 and 2, and between channels 3 and 4. Connect similar type microphones to these channels (i.e. do not connect dynamic MIC to channel 2 when a condenser MIC is connected to channel 1 and phantom power on channels 1 and 2 is turned ON). When phantom power is activated, the red LED just above the switch illuminates. These switches are recessed to avoid accidental activation and loud clicking sounds during your performance, yet they are easily accessible. The Matrix-600 uses high-quality phantom power with full 48Vdc voltage to accommodate virtually any condenser microphone. Turn the MASTER VOLUME down completely before activating the PHANTOM POWER to avoid loud clicks from your speakers.
15. **LINE INPUT:** Balanced 1/4" TRS connector for mono line-level sources.
16. **VOLUME:** Controls the signal volume of each individual channel.
17. **PAN:** Controls routing the mono signals to either Left or Right speakers. Place PAN in a neutral position to keep source centered. Turning this control from center moves the image of the performer on this channel towards one side. Either fully clockwise or counter-clockwise will solely place the performer in either the right or left side.

## INPUT 5

18. **MIC/INSTRUMENT INPUT:** Combo XLR and 1/4" TRS connector is used to connect two different sources. XLR is balanced low impedance input for dynamic microphone. 1/4" TRS is mono unbalanced high impedance input for a wider range of sources, such as an acoustical instrument with a pick up.
19. **STEREO LINE INPUT:** 1/4" TRS connector is a stereo

**B-52**  
PROFESSIONAL

**MATRIX**

**MASTER**

5: +6dB, +3dB, 0dB, -3dB, -6dB

63 160 400 1K 2K 6.3K 16K

4: +3dB, 0dB, -6dB, -15dB, -25dB

3: PROTECT

2: 5: POWER

6: 0 10 VOLUME

1: 1. X-FACTOR 5. HALL 9. VOCAL REV. 13. ROTARY SPUR  
2. FLANGE 6. ROOM 10. DELAY 14. ROTARY REV.  
3. FLANGE REV. 7. PLATE 1 11. ECHO 1 15. CHORUS  
4. FLANGE DEL. 8. PLATE 2 12. ECHO 2 16. TREMOLO

11: 5 0 10 LEVEL

12: 5 0 10 EFFECTS TO MONITOR

7: 5 0 10 LEVEL

8: 16 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

9: DIGITAL EFFECTS

10: 5 0 10 PARAMETERS

ACTIVE TO RECORD

**INPUTS**

31: 5 0 10 EFFECTS

30: 5 0 10 MONITOR

29: 0 MIN MAX TREBLE

28: 0 MIN MAX MID

27: 0 MIN MAX BASS

17: 0 LEFT RIGHT PAN

16: 5 0 10 VOLUME

21: 0 LEFT RIGHT PAN

20: 5 0 10 VOLUME

26: 5 0 10 HOUSE LEVEL

24: 5 0 10 VOLUME

15: 14 48V

13: 15

1: LINE 14

2: LINE

3: LINE

4: LINE

5: STEREO LINE

6: MP3/CD

23: 23

22: L STEREO R

25: L HOUSE R

48V PHANTOM POWERED BALANCED MICS | MIC/INST/LINE | MP3/AUX/HOUSE

**600-WATT POWERED STEREO MIXER WITH DSP**



# MATRIX-600 FRONT PANEL CONTROLS & CONNECTORS

unbalanced high-impedance input for any stereo line-level sources.

20. **VOLUME:** Controls volume of the input signal.
21. **PAN/BALANCE:** Balances stereo image of stereo sources connected to the STEREO LINE INPUT, or pans the mono source connected to the MIC / INSTRUMENT INPUT.

## INPUT 6

22. **STEREO L/R RCA INPUTs:** Left and Right RCA stereo inputs are used to connect a stereo line-level source such as a CD player.
23. **STEREO MP3/CD INPUT:** 3.5mm mini jack stereo is used to connect portable stereo line-level sources such as a MP3 player, iPod™ or CD player.
24. **VOLUME:** Controls the volume of the input signal connected to either the RCA or mini jack stereo inputs.
25. **STEREO L/R RCA HOUSE INPUTs:** Left and Right RCA stereo inputs are used to connect stereo line-level sources such as a CD player. This channel is a spare channel not going through the channel's EQs, PAN and is not routed to DIGITAL EFFECTS and MONITOR outputs like all other channels. It is normally used to connect to an "in house" background music source so that the Matrix-600 system could be used by the house staff with out affecting the settings reserved for the DJs and/or musicians on other channels. It also bypasses the MASTER

VOLUME and is controlled by its own LEVEL.

26. **HOUSE LEVEL:** Controls the volume of input signal connected to the HOUSE STEREO LINE RCA inputs.

## INPUTS 1 to 6

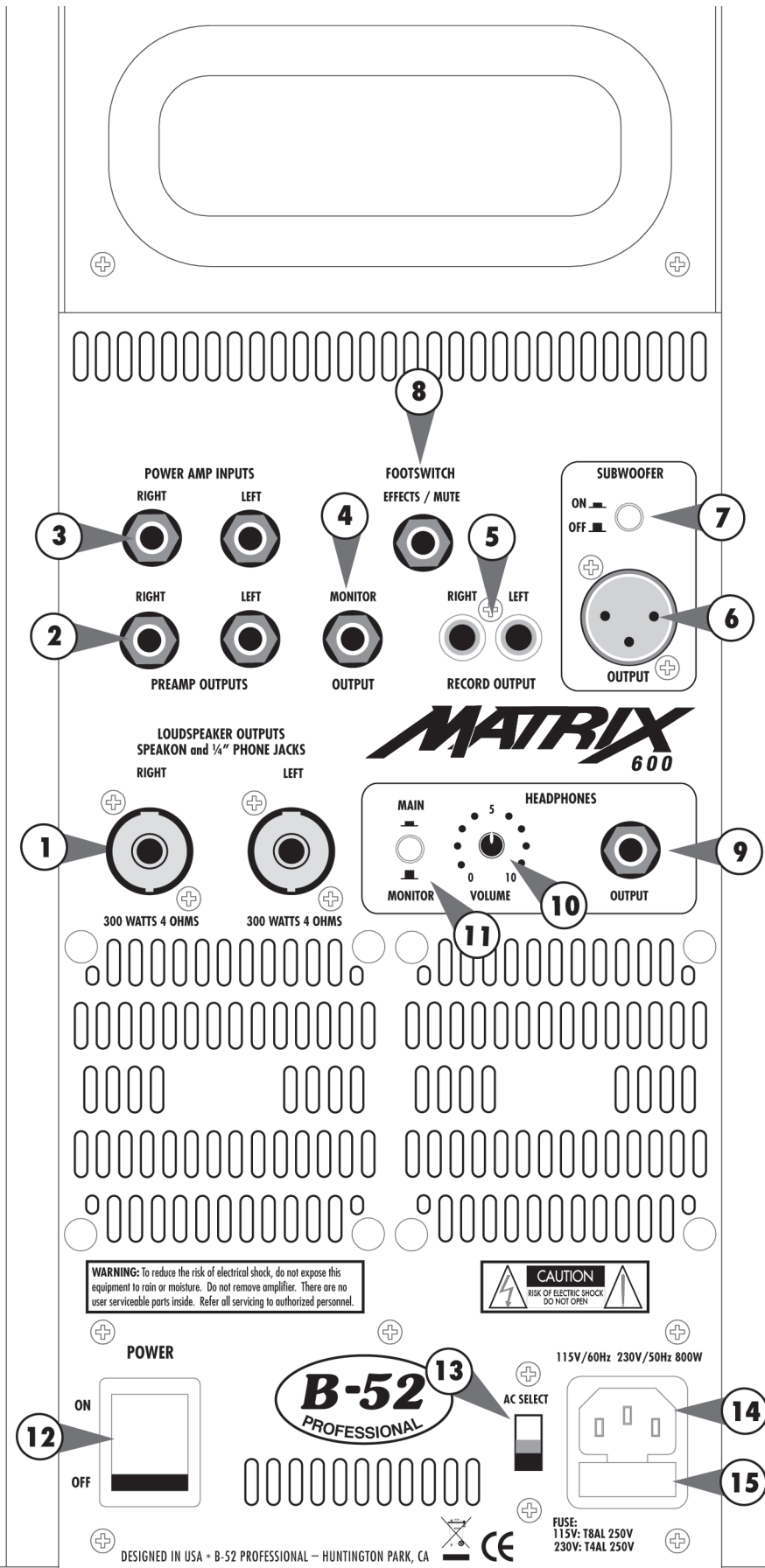
*(All inputs, except the HOUSE stereo input, have similar 3-band EQs on each channel, MONITOR LEVEL and EFFECT LEVEL controls. The EQs are optimized for different sources connected to different channels for best performance)*

27. **BASS EQ:** Adds or subtracts bass to the signal.
28. **MID EQ:** Adds or subtracts mid frequencies to the signal. This control will add vocal clarity or instrument presence.
29. **TREBLE EQ:** Adds or subtracts high frequencies to the signal.
30. **MONITOR LEVEL:** Controls the ratio of this channel's signal which is mixed to MONITOR output on the rear panel. This can also be used to control the level of this channel in the headphones when the headphones are switched to MONITOR as a source.
31. **EFFECTS LEVEL:** Controls the ratio of this channel's signal when routed to DSP effects.

**CAUTION:** The system's components are matched for the best possible sound quality and may only be operated in the specified configuration provided in this manual. Use of any other speakers may hinder the sound quality and can damage the power amplifier.

**CAUTION:** Do not block air intake on the rear panel and air exit slots on the top (below wooden handle). The Matrix-600 has a high power amplifier, which dissipates heat and needs air circulation to cool down its heatsink. Blocking air access slots can force the Matrix-600 into protection mode and can cause potential damage to the system, which is not covered by the warranty.

# MATRIX-600 REAR PANEL CONTROLS & CONNECTORS



- LOUDSPEAKER OUTPUTS – RIGHT and LEFT:** Connect to RIGHT and LEFT speakers accordingly. Use only speakers supplied with the system. The Matrix-600 is equipped with combo output connectors which accept both Speakon™ and 1/4" plug speaker cables for flexibility. The Matrix-600 comes includes a pair of 20' high quality speaker cables with 1/4" plugs. We encourage you to upgrade these speaker cables to cables with Speakon™ connectors on both ends. The speaker cables must have a standard connection, (1-) connected to ground and (1+) connected to output.
- PREAMP OUTPUTS L/R:** These 1/4" TRS Jack outputs could be used to connect the mixer of the Matrix-600 to an external sound system, including connections to a mixer, preamp or power amplifiers. This provides you the flexibility of using the Matrix-600 with an existing sound system. The power amplifier built-in to the Matrix-600 will automatically disconnect. Make sure your external sound system is OFF before making such a connection.
- POWER AMP INPUTS L/R:** Use these 1/4" TRS Jack inputs to connect the power amplifier of the Matrix-600 system to an external source, such as an outboard audio mixer. This connection will automatically disconnect the amplifiers from the rest of the unit. The signal from the front panel of the Matrix-600 mixer will not be routed to the amplifiers. Make sure the Matrix-600 is turned OFF and the external sound source's level is set to zero before making such a connection.
- MONITOR OUTPUT:** Use this 1/4" TRS Jack output to connect a powered monitor (or a power amplifier with a passive monitor) to your Matrix-600 system. You can control the overall level of the MONITOR output, the level of effects mixed to the MONITOR output, as well as the individual channels levels going to the MONITOR output with the corresponding controls on the mixer.
- RECORD OUTPUT:** Connect these stereo

RCA output connectors to your recording device. You can record the dry output signal (without DSP effects mixed in) or the full output mix including effects by switching EFFECTS to RECORD in the DSP section on the front panel.

6. **SUBWOOFER OUTPUT:** Connect either balanced or unbalanced input of your optional powered subwoofer to this XLR connector for increased bass output. The 10" speakers included with your Matrix-600 system can already produce clean bass. In some applications adding an external subwoofer will result in additional bass extension and higher bass SPL. Note that the SUBWOOFER output will only have a signal only when the SUBWOOFER switch is set to the ON position.
7. **SUBWOOFER ON/OFF SWITCH:** Activate the subwoofer output by turning ON the SUBWOOFER switch. Filtered low frequencies combined from both the LEFT and RIGHT channels will be directed to the SUBWOOFER XLR output and will be cut off from the main speakers. This increases the main speakers' headroom and allows you to play the entire Matrix-600 system with higher SPLs. Do not forget to set the SUBWOOFER switch to the OFF position after you disconnect subwoofer, otherwise your main speaker outputs will remain filtered with a high pass filter, therefore producing limited bass response.
8. **FOOTSWITCH:** You can connect an optional footswitch which as one or two switches to MUTE the entire Matrix-600 system or to MUTE EFFECTS only. Most industry standard foot switches should work with your Matrix-600 system.
9. **HEADPHONES OUTPUT:** The Matrix-600 has a dedicated high quality amplifier to power your headphones. You can use the headphones for rehearsals, for monitoring while DJing or during live performances. Connect your headphones to this 1/4" TRS stereo Jack. Control the signal level via the controls on the mixer and the controls in the HEADPHONES section next to connector.
10. **HEADPHONES LEVEL:** Use to adjust the overall volume of your headphones. With the MASTER VOLUME (or MONITOR VOLUME) set to normal listening level, the HEADPHONES level control will allow you to set the maximum level of the headphones. You can easily change the volume of your headphones using the MASTER (or MONITOR) VOLUME controls on the front panel without overdriving your headphones.
11. **HEADPHONES MONITOR/MAIN SWITCH:** This switch routes your headphones to either the main outputs, controlled the same way as your loudspeakers by the MASTER VOLUME, or the MONITOR output. In this case your headphones perform as mono headphones and are controlled the same way as your MONITOR output by the MONITOR VOLUME and MONITOR LEVELS on the individual channels.

12. **POWER SWITCH:** Press this switch to turn the MATRIX-600 ON or OFF. The switch is illuminated red in the ON position.
13. **VOLTAGE SELECTOR SWITCH: DO NOT CHANGE THIS SETTING WITH THE AC MAINS POWER ATTACHED!** This switch should only used when the Matrix-600 is transported to a location with a different available AC mains source. Please check that this switch is in the appropriate position for your local electrical source. You will need to change the primary fuse when in accordance with the fuse ratings indicated on the rear panel.

**WARNING:** Using an improper setting on this switch can destroy the MATRIX-600, create an electrical hazard and void your warranty! The switch setting should match the AC mains power available.

14. **AC INLET:** Male IEC AC mains connector for standard detachable AC mains cords. This cord will also need to change if the unit is moved between regions with different AC mains voltages. It will require an AC mains switch setting change as well.
15. **FUSE HOLDER:** The rating of this fuse depends on the local AC Mains voltage. For 115V setting, this fuse is a 8A (T8AL). For the 230V setting, it is a 4A (T4AL) as shown on a rear panel next to the fuse holder.

*NEVER REPLACE THE FUSE WITH FUSES OTHER THAN INDICATED IN THIS MANUAL AND ON THE REAR PANEL OF YOUR MATRIX-600 UNIT. NOTE THAT A BLOWN FUSE MAY REPRESENT A SERIOUS MALFUNCTION AND MAY REQUIRE REPAIR. IF THE FUSE BLOWS WHEN REPLACED, REFER YOUR MATRIX-600 TO QUALIFIED SERVICE PERSONNEL AS INSTRUCTED BY B-52 PROFESSIONAL.*

# MATRIX-600 SPEAKERS

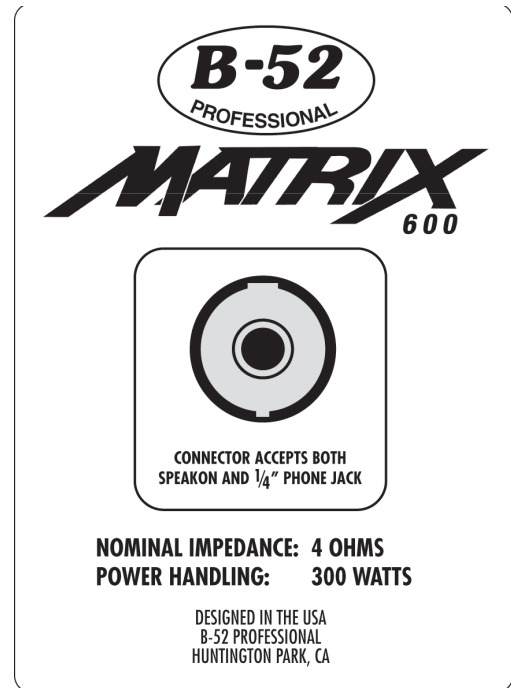
The three-way loudspeakers of the Matrix-600 system were designed to perfectly match to the Matrix-600 amplifier and mixer. The loudspeakers and electronics are optimized to deliver highest level of sonic performance.

The Matrix-600's loudspeakers employ custom made high excursion 10" woofers in a rear ported cabinet design for an extended bass response. The mid frequencies are reproduced by a 6.5" midrange drivers with large magnets for excellent clarity.

The compression drivers, which are mounted to exponential horns, perfectly match the acoustic response of 6.5" midrange drivers providing a smooth extension of frequency response. The three-way speaker design, combined with an advanced crossover networks, provide a wide coverage angle and clean peak SPLs, which out perform traditional two-way speakers.

The Matrix-600 loudspeakers have a solid construction with extensive bracing and are coated with durable black paint. The large gauge steel grilles were designed to withstand the abuse of the road. Large rubber feet and an ergonomic handle allow for easy handling and transport. The Matrix-600 loudspeakers are built for both mobile users and installations with a standard 35mm stand pole mounting cup and three suspension points. A combo connector on the rear terminal plate accepts both Speakon™ and 1/4" plug speaker cables for speaker connection flexibility.

# MATRIX-600 INPUTS



**CAUTION:** Matrix-600 loudspeakers are 4 Ohm rated. DO NOT connect any additional loudspeakers in parallel to the speakers provided. Such a parallel connection will lower the total load impedance for the Matrix-600 power amplifier and will cause the amplifier to go into protection, and can possibly damage the amplifiers.

## **B-52** *Limited Warranty*

Thank you for choosing a B-52 sound product. B-52 manufactures some of the world's best sounding and most reliable professional speaker systems, amplifiers and components. E.T.I. Sound Systems, Inc., makers of B-52, takes great pride in thoroughly testing each B-52 product prior to shipment.

**B-52 CABINETS:** E.T.I. Sound Systems, Inc. offers a lifetime warranty to the original purchaser that a B-52's cabinet construction will be free from defects in material and workmanship. A dated sales receipt will establish coverage under this warranty. This warranty does not cover service or parts to repair damage caused by neglect, abuse, normal & wear and cosmetic appearance of the cabinetry not directly attributed to defects in material or workmanship, or service, repair, modifications of the cabinet, which has not been authorized or approved by E.T.I. If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided above.

**LOUDSPEAKER AND MID-RANGE COMPONENTS:** E.T.I. Sound Systems, Inc. warrants the original purchaser that B-52 loudspeakers and/or midrange components will be free from defects in material and workmanship for a period of (5) five years from the original purchase date. A dated sales receipt will establish coverage under this warranty. This warranty will automatically terminate (5) years after the original retail sales date. This (5) five-year warranty does not cover service or parts to repair damage caused by accident, disaster, misuse, abuse, burnt voice-coils, over-powering, negligence, inadequate packing or shipping procedures and service, repair or modifications of the component which has not been authorized or approved by E.T.I.. This warranty is in lieu of all other expressed warranties. If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided above.

**HIGH-FREQUENCY DEVICES:** E.T.I. Sound Systems, Inc. offers a (5) five year warranty to the original purchaser that B-52 high frequency (tweeters) devices will be free from defects in material and workmanship. A dated sales receipt will establish coverage under this warranty. This warranty does not warranty neglect or abuse. **NO WARRANTY IS OFFERED ON HIGH-FREQUENCY DEVICES IN B-52 SYSTEMS WITH A BI-AMP SWITCH OPTION.** The (5) five year warranty on high-frequency devices does not cover service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures and service, repair or modifications of the product which has not been authorized or approved by E.T.I. This warranty is in lieu of all other expressed warranties. If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided above.

**PRO-AUDIO AMPLIFIERS:** E.T.I. Sound Systems, Inc. warrants the original purchaser that B-52 amplifiers will be free from defects in material and workmanship for a period of (2) two years from the original purchase date. A dated sales receipt will establish coverage under this warranty. This warranty will automatically terminate (2) years after the original retail sales date. This (2) two-year warranty does not cover service or parts to repair damage caused by accident, disaster, misuse, abuse, over-powering, negligence, inadequate packing or shipping procedures and service, repair or modifications of the amplifier which has not been authorized or approved by E.T.I.. This warranty is in lieu of all other expressed warranties. If this

product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided above.

**RETURN PROCEDURES:** In the unlikely event that a defect should occur, follow the procedure outlined below. Defective products must be shipped, together with proof of purchase, freight pre-paid and insured to the Authorized B-52 Dealer from whom you purchased the product or directly to E.T.I. Sound Systems. If a product must be returned to E.T.I. Sound Systems for warranty replacement/repair, a Return Authorization Number must be obtained from our Customer Service Department prior to shipping the product. **NEVER RETURN THE ENTIRE CABINET - JUST THE DEFECTIVE COMPONENT.** Identify and remove the defective component. If you are uncertain which component is defective, or need directions for removing a component, please contact our Customer Service Department for assistance. Components which are a part of an original B-52 speaker box must be sent directly to E.T.I. Products must be shipped in the original packaging or its equivalent; in any case, the risk of loss or damage in transit is to be borne by the purchaser. The Return Authorization Number must appear in large print directly below the shipping address. Always include a brief description of the defect, along with your correct return address and telephone number. When calling to inquire about a returned product, always refer to the Return Authorization Number. If E.T.I. determines that the unit was defective in materials or workmanship at any time during the warranty period, E.T.I. has the option of repairing or replacing the product at no additional charge, except as set forth below. All replaced parts become a property of E.T.I. Products replaced or repaired under this warranty will be returned via ground-shipping-within the United States-freight prepaid. E.T.I. is not responsible for costs associated with expedited shipping, either to E.T.I. or the return of the product to the customer.

**INCIDENTAL OR CONSEQUENTIAL DAMAGE:** In no event will E.T.I. be liable for any incidental or consequential damages arising out of the use or inability to use of any B-52 product, even if E.T.I. or a B-52 dealer has been advised of the possibility of such damages, or any other claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

**FOR YOUR PROTECTION:** Please complete and mail the Purchase Information Card within (10) ten days of the date of purchase so that we may contact you directly in the event a safety notification issued in accordance with the 1972 Consumer Product Safety Act. In addition, we ask that you complete the brief questionnaire so we may analyze your answers and in this way, help us evaluate our customer needs.

**CUSTOMER SERVICE:** Our dedicated staff is ready to help you with any B-52 warrant or product questions you may have. Please call 323-277-4100 (9:00AM to 4:00PM Pacific Standard Time).



E.T.I. Sound Systems, INC.  
3383 Gage Ave., Huntington Park, CA, 90255